

Amendment
Application No. 10/567,555
Attorney Docket No. 053500

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

Listing of Claims

Claim 1 (cancelled)

Claim 2 (cancelled)

Claim 3 (previously presented): A conductive polymer according to claim 12, wherein the conductive polymer obtained by the oxidation polymerization uses an organic sulfonic acid as a dopant.

Claim 4 (previously presented): A conductive polymer according to claim 12, wherein the cation of the organic sulfonate is a metal cation other than a transition metal.

Claim 5 (previously presented): A conductive polymer according to claim 12, wherein the cation of the organic sulfonate has a backbone having at least one selected from the group consisting of five-membered heterocyclic ring, benzene ring, naphthalene ring, tetralin ring and anthracene ring, and at least one selected from the group consisting of NH group and NH₂.

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Claim 6 (cancelled)

Claim 7 (cancelled)

Claim 8 (currently amended): A conductive polymer, comprising a matrix of the conductive polymer and an organic sulfonate coated on or included in the conductive polymer, wherein the conductive polymer is obtained by oxidation polymerization, wherein the organic sulfonate is formed by an anion of an organic sulfonic acid and a cation other than a transition metal ~~A conductive polymer according to claim 12, wherein the anion of the organic sulfonate has a backbone having at least one selected from the group consisting of benzene ring, naphthalene ring, tetralin ring and anthracene ring, wherein the backbone is connected to at least one functional group selected from the group consisting of alkyl group having a carbon number of 1 to 12, hydroxyl group, alkoxy carbonyl group having a carbon number of 2 to 10, alkoxy group and aldehyde group having a carbon number of 1 to 10, and at least one sulfonic acid group, wherein protons of the sulfonic acid are partially replaced with fluorine.~~

Claim 9 (cancelled)

Claim 10 (previously presented): A conductive polymer according to claim 12, wherein the oxidation polymerization is chemical oxidation polymerization, wherein the conductive

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polymer obtained by the chemical oxidation polymerization comprises a transition metal salt of the organic sulfonic acid serving as a dopant as well as serving as an oxidant.

Claim 11 (currently amended): A solid electrolytic capacitor, wherein the conductive polymer according to claim 12 [[1]] is used as a solid electrolyte.

Claim 12 (currently amended): A conductive polymer, comprising a matrix of the conductive polymer and an organic sulfonate coated on or included in the conductive polymer, wherein the conductive polymer is obtained by oxidation polymerization, wherein the organic sulfonate is formed by an anion of an organic sulfonic acid and a cation other than a transition metal, wherein the conductive polymer is a polyethylene dioxythiophene, wherein the organic sulfonic acid is one selected from the group consisting of phenol sulfonic acid, cresol sulfonic acid and benzaldehyde sulfonic acid.

Claim 13 (new): A conductive polymer, wherein the conductive polymer according to claim 12 is a polymer obtained from 3,4-dioxythiophene.

Claim 14 (new): A method for preparing a conductive polymer, comprising:
preparing a matrix of a conductive polymer by oxidation polymerization; and
subsequently providing an organic sulfonate on or in the matrix;

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wherein the organic sulfonate is formed by an anion of an organic sulfonic acid and a cation other than a transition metal.

Claim 15 (new): A method for preparing a conductive polymer according to claim 14, wherein the organic sulfonate is provided on the matrix by coating.

Claim 16 (new): A method for preparing a conductive polymer according to claim 14, wherein the organic sulfonate is provided in the matrix by immersion.

Claim 17 (new): A method for preparing a conductive polymer according to claim 14, wherein the conductive polymer is a polyethylene dioxythiophene.

Claim 18 (new): A method for preparing a conductive polymer according to claim 14, wherein the organic sulfonic acid is one selected from the group consisting of phenol sulfonic acid, cresol sulfonic acid and benzaldehyde sulfonic acid.

Claim 19 (new): A method for preparing a conductive polymer according to claim 14, wherein a monomer for the conductive polymer is at least one selected from the group consisting of thiophene, pyrrole and the derivatives thereof.

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Claim 20 (new): A method for preparing a conductive polymer according to claim 14, wherein the cation of the organic sulfonate is a metal cation other than a transition metal.

Claim 21 (new): A method for preparing a conductive polymer according to claim 14, wherein the cation of the organic sulfonate has a backbone having at least one selected from the group consisting of five-membered heterocyclic ring, benzene ring, naphthalene ring, tetralin ring and anthracene ring, and at least one selected from the group consisting of NH group and NH₂.

Claim 22 (new): A method for preparing a conductive polymer according to claim 14, wherein the anion of the organic sulfonate has a backbone having at least one selected from the group consisting of benzene ring, naphthalene ring, tetralin ring and anthracene ring.

Claim 23 (new): A method for preparing a conductive polymer according to claim 14, wherein the anion of the organic sulfonate has a backbone having at least one selected from the group consisting of benzene ring, naphthalene ring, tetralin ring and anthracene ring, wherein the backbone is connected to at least one functional group selected from the group consisting of alkyl group having a carbon number of 1 to 12, hydroxyl group, alkoxy carbonyl group having a carbon number of 2 to 10, alkoxy group and aldehyde group having a carbon number of 1 to 10, and at least one sulfonic acid group.

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Claim 24 (new): A method for preparing a conductive polymer according to claim 14, wherein the anion of the organic sulfonate has a backbone having at least one selected from the group consisting of benzene ring, naphthalene ring, tetralin ring and anthracene ring, wherein the backbone is connected to at least one functional group selected from the group consisting of alkyl group having a carbon number of 1 to 12, hydroxyl group, alkoxy carbonyl group having a carbon number of 2 to 10, alkoxyl group and aldehyde group having a carbon number of 1 to 10, and at least one sulfonic acid group, wherein protons of the sulfonic acid are partially replaced with fluorine.

Claim 25 (new): A method for preparing a conductive polymer according to claim 14, wherein the organic sulfonate is a mixture of a first organic sulfonate comprising an anion having a backbone having at least one selected from the group consisting of benzene ring, naphthalene ring, tetralin ring and anthracene ring, and hydroxyl group and at least one sulfonic acid; and a second organic sulfonate comprising an anion having a backbone having at least one selected from the group consisting of benzene ring, naphthalene ring, tetralin ring and anthracene ring, an aldehyde group having a carbon number of 1 to 10, and at least one sulfonic acid group.